

Effect of Teacher Quality on the Development of Students' Vocational Skills in the Building Construction Programme in Technical High Schools in the Littoral and Southwest Regions of Cameroon

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ABSTRACT

The study examined the effect of teacher quality on the development of students' vocational skills in technical high schools in the Littoral and Southwest Regions of Cameroon. The research used a cross-sectional survey research design. Using a questionnaire, data was collected from a sample of 83 teachers and 277 students from 9 schools, 5 in the Fako Division of the South West and 4 in the Wouri division of the Littoral regions. Content validity index was 1 while reliability index for teachers and students' questionnaires were 0.837 and 0.787 respectively. Data were analysed using SPSS version 21.0 using counting techniques namely frequency and proportions. The study found out that, there was a significant positive correlation between teacher quality and the acquisition of vocational skills by students ($r = 0.785$; $P = 0.000$). The hypothesis here stated was then rejected. That is, the more effective the teachers are, the more the students will be able to acquire vocational skills. From the findings it is recommended that all teachers holding a qualification below the first degree should be enrolled in the Higher Technical Teacher Training College to obtain a degree.

KEYWORDS: Technical Education; Building Construction, Teacher Quality, Students, Vocational Skills

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INTRODUCTION

To supply the labour market with qualified workers, technical vocational education and training (TVET) was created. Karmel (2007) asserts that TVET objectives can be met by combining classroom learning with on-the-job experience. According to Kamel, the nation's development could be aided by the proper training of students at technical vocational high schools if they are given practical occupational skills in addition to employability skills, entrepreneurship skills, and industry experiences. According to Afeti (2006), technical vocational institutions are crucial since they are focused on preparing students for the workforce and place a strong emphasis on developing practical skills in their curricula. Anindo, Mugambi, and Matula (2016), revealed that, TVET delivery systems are in a good position to prepare the skilled labour force that Africa needs to generate prosperity and escape poverty.

Audu et al. (2013) regret that the number of graduates entering the workforce does not correspond to the number of graduates with the expected skill sets from TVET colleges. The primary objective of TVET in Cameroon, according to Law N0 98/004 of April 14, 1998, which establishes rules for education, is for students to gain knowledge, attitudes, and skills for the working world. To Audu et al. (2013), the TVET system must be effective and efficient in carrying out pedagogic activities that foster these skills in the students, including the quality of resources used during the process that ensure quality teaching and learning, in order for such knowledge and skills to be acquired. According to Dasmani (2011), if TVET colleges are appropriately funded and have skilled professionals to instruct the students, then students should be able to gain excellent skills. Dasmani, posited that, insufficient training resources, high class

size, subpar training facilities, limited connections with the business community, and other factors would prevent students from developing the necessary skills. Dasmani said that TVET institutions that place a strong emphasis on students passing final exams will, as a result, graduate students that are lacking the skills necessary for the workplace of the twenty-first century. According to Udofia, Ekpo, Akpan, and Nsa (2012), there is a considerable correlation between instruction, learning environments, and occupational abilities, particularly in programs like craft and construction. Again, Utopia et al. (2012) expressed the opinion that it would be impossible for students to obtain vocational skills without sufficient funding, knowledgeable staff, and high-quality equipment because students learn what is directly taught to them. Fullan et al. (2015) confirmed that students learn what is directly taught to them and finally, teachers' teaching skills depend highly on knowledge and attributes acquired through continuous learning and practice. Musungu and Nasongo (2008) conclude that the overall support system within the teaching learning process must constantly be checked and evaluated if students are to develop skills.

Statement of the Problem

According to the law orienting education in Cameroon, technical education should train students to confront the job market with skills acquired during theoretical and practical lessons. In spite of the government's efforts in creating many teachers' training colleges in the country, teachers' deficit both in quantity and quality in the building construction department in technical high schools within the nation seems to be on the increase and hence may have an effect on skills acquisition by the students. According to the pedagogic reports for the year 2020 in Cameroon, the teaching environment in the present technical high schools are facing a lot of challenges ranging from inadequate teachers both in quantity and quality as some teachers continue to use conventional teaching methods for practical lessons that may not guarantee skills development. The National Development Strategy 2030 aims at transforming the economy by adding value to most primary products to raise the economy to a manufacturing level. It is anticipated that technical high school graduates will account for a good portion of the trained human resources to effect this economic transformation. It is against this backdrop that this study seeks to investigate the extent to which teacher quality in technical high schools in Cameroon can contribute to the development of students' vocational skills.

Research question

To what extent does teacher quality affect the development of students' vocational skills in

Technical High schools in the Littoral and Southwest Regions of Cameroon?

Research Hypothesis

Ho: There is no significant relationship between teacher quality in building construction programme and the development of students' vocational skills in technical high schools in the Littoral and Southwest Regions of Cameroon.

Ha: There is a significant relationship between teacher quality in building construction programme and the development of students' vocational skills in technical high schools in the Littoral and Southwest Regions of Cameroon.

Review of Related Literature

Building Construction Programme in Cameroon Technical High Schools

The main aim of the building construction programme is to enable students to acquire technical skills, managerial skills, and knowledge that will enable them to pursue studies in higher institutions of learning, be self-employed, or gain employment in the industries (GCE Board, 2012). Specifically, this programme expects that before graduation, students should be able to calculate simple addition, subtraction, multiplication, and division of quantities of materials used in construction. Secondly, students should be able to carry out calculations involving ratios, proportions, percentages, areas, volumes, and masses. Furthermore, students are expected to plot, scale, and interpret graphs; have a good knowledge of the English language to enable them to answer essay questions; use and interpret tables; and have a good knowledge of the use of tools and instruments (GCE Board, 2012).

Cameroon, as a developing nation, needs a trained labour force to develop the nation both today and in the future (Dione-Ngote, 2020). To meet this challenge, the construction sector needs technicians who are able to carry out infrastructural development to meet the needs of individuals and the country as a whole. To achieve these, the building construction programme must equip students with the higher-order thinking skills needed by them in the building industry. According to the training programme, building construction students should be able to draw building plans, design houses, and carry out construction processes. These are skills that students need to integrate squarely, either into middle-level manpower positions or as full-time technicians in the construction industry.

The programme has been designed to cater for the needs of students who wish to go into further education as well as those who wish to exit the school

system after high school. For students who wish to go in for higher levels of education and training in universities, polytechnics, and colleges of education and technology, the course provides adequate knowledge and skills for success at such levels. The 2012 syllabus states that students who wish to terminate their programme at the end of technical high school must have adequate skills and knowledge about materials, building processes, and construction procedures that will help them integrate without difficulties in the construction industry. In general, the aims of the building construction programme in Cameroon, as prescribed by the training syllabus (2012), are designed to help students acquire knowledge and skills for the building construction trade and related professions. Again, teachers should use local materials to develop the abilities of craftsmen in the building industry and the capacity of students to provide solutions to construction problems while taking precautionary measures for their safety during construction. Finally, the programme provides opportunities for students to inculcate moral values and trustworthiness in the use of materials and other input supplied for the projects.

Teacher Quality

Teachers play a vital role in ensuring quality education delivery. They are best known for the role of educating students in their care. The most common role teachers' play in the classroom is to dispense pertinent knowledge to students by following the curriculum. Teachers use various methods such as lecture, small group activities and hands-on learning activities to dispense knowledge to students. Beyond that, they serve many other roles in the classroom. Teachers set the tone of their classrooms, build warm environment, mentor and nurture students, become role models, listen and look for signs of trouble and much more (Fraser & Walberg, 2005). Teaching is demanding and requires a variety of ways which include time, effort and commitment. Teachers prepare students for the job market and the socio-economic development of every nation. They are required to exhibit good qualities and accommodate the academic, social and emotional needs of their students (Williams, 2003). Heinrich (2008) added that teachers are at the core of every educational system and therefore, the quality of the teacher in every school system reflects the overall quality of the school system. Alvarez (2008) refers to teacher quality as professionals who recognises the students' educational needs, possesses specific teaching skills and knows how to assist students acquire skills. According to Bill (1997), a good teacher is one who provides children with the knowledge, information and skills needed to compete in an increasingly

complex market place. Such teachers must be able to promote children's intellectual capacity and social development. Therefore, teachers on their part must master skills on how to teach in order to help children reach high level of competence.

According to the National Centre for Education Statistics NCES (1999), teacher quality refers to those experts who know how to recognize children's difficulties and diagnose sources of these problems. These skills are particularly important because a growing number of students are with a wide range of learning needs. NCES (1999) opined that for teachers to be effective, teachers must master their subject matter, employ diverse instructional strategies that meet the learners' need and establish proper assessment techniques to measure students' professional development. Ko (2003) looked at teacher quality as a general term for teachers' professional qualifications and abilities while Peng (1999) as cited in Bisong (2020) holds that the content of teacher quality can be categorized into common professional knowledge, professional beliefs, professional attitude and personality, and professional subject knowledge and accomplishment.

Wu (2003) therefore defined teacher quality as teachers who are able to consistently assist their students in making significant achievement in skill development. Davis (2001) ascertained that for any teacher to assume the function of a technical school professional, he must possess the needed competences to develop knowledge and skills especially in competency-based learning. Cochran-Smith and Fries (2005) put it that, teacher quality refers to all teacher related characteristics that produces favourable educational outcomes such as student's performance on standardized tests.

Kunter, Klusmann, Baumert, Max, Voss and Hachfeld (2013) suggested that good teachers should demonstrate a stable cognitive characteristic and a good professional specific knowledge acquired during teacher education. Kennedy, Ahn and Choi (2008) used the concept of "bright person hypothesis" (BPH) to indicate teacher quality. They opined that a good teacher is one who is bright, smart and thoughtful enough to figure out the nuances of teaching in the process of doing it. In other words, Kunter, et al. (2013) postulated that, the cognitive capabilities with which people enter the teaching career are seen as crucial for determining teacher quality. Feldon (2007) supported that teaching is highly demanding, complex and inherently unpredictable task that requires high cognitive flexibility and a capacity for quick problem solving. Kunter, et al. (2013) illustrated that cognitive abilities measured by standardized tests and academic

abilities as indicated by high school grade point average predict professional success for teachers.

Kunter, et al. (2013) added that if the best teachers are characterized by their high intelligence level, then recruitment of teachers should be focused on it. According to Jennings and Greenberg (2009), effective teaching does not only include cognitive challenge but it is also socially and emotionally demanding. In order to meet these challenges over extended periods of time, teachers need to regulate their engagement and to develop ways of coping with the constant demands of their work (Jennings & Greenberg, 2009). Teachers therefore need to develop self-regulation skills in order to maintain their occupational commitment over time and to seek favourable motivational and emotional outcomes (Maslach & Leiter, 1999). Bromme (2001) identified three different competences required of a competent teacher. These include teachers' content knowledge, pedagogical knowledge and psychological knowledge. Baumert, Kunter, Blum, Brunner, Voss, Jordan and Tsai (2010) defined content knowledge as a deep understanding of the content to be taught while pedagogical content knowledge is defined as the knowledge necessary to make these contents accessible to students. On the other hand, psychological knowledge is defined as the generic, cross-curricular knowledge needed to create and optimize teaching and learning (Voss, Kunter & Baumert, 2011). According to Stronge (2007), the positive and negative behaviours teachers' exhibit in the classroom determines the extent of their effectiveness and ultimately impact on student's achievement.

According to Voort (2004) suggestions, there is a wide consensus among researchers and policy makers that teacher quality is the most important issue in current movement of educational reforms and school movement. Lacko-kerr (2002) postulated that the concept of teacher quality should look into the teacher personalities, traits, behaviours, attitudes, values, abilities and competences that will move students from one grade point to another. Rock off (2003) in his view suggested that teacher quality should illustrate their teaching styles, teacher-students' interactions and classroom management techniques. On the other hand, Stephens (2003) opined that teacher quality should focused on teaching outcomes such as learning outcomes, personal development and learning experience. Kirkpatrick (2002) affirms that despite the interest in teacher quality and relationship to students' achievement, it is not clear how these variables are related to one another or how they collectively impact students achievement. In effect, Kirkpatrick (2002) maintained that variables

such as formal educational background, content knowledge, teaching practices, teaching experience has been widely studied, but more evidence is needed to establish the relationship among these variables and students' achievement. Cheng (1996) argued that teacher quality stand as the best and powerful predictor of students' achievement. To figlo (1997), teachers with better credentials may be more likely to teach with confidence and promote higher achievement rate by students. From the foregoing discussion some of the observable characteristics of teacher quality examined in this study include; teacher knowledge of subject matter, training and certification, professional development and teaching skills of the teacher.

Teacher Knowledge of Subject Matter

Teaching is said to be a noble profession. It encompasses imparting of knowledge, skills and attitudes. The mastery of subject matter is an essential skill that a teacher requires to be endowed with, in the teaching and learning process as it has a direct impact on teaching and learning in schools (Lydia, Ngugi, & Thinguri, 2014). Teachers are required to know what they are teaching because understanding of subject matter by a teacher implies that the teachers is able to grasp the main points and teach them to the learners and to correct any misconceptions of knowledge and all this revolves around the teachers understanding of the subject matter (Lydia, et al., 2014). Shantz and Latham, (2012) state that teacher's mastery of subject matter form the foundation upon which the education of a teacher is based. The teacher specializes on the subjects to be taught which generally equips the teacher with scholarly knowledge of those subjects and integrates with professional education leading to new understandings and skills for professional performance (Shantz & Latham, 2012). Hammond (2006) postulates that among other things, teacher's knowledge of teaching and of subject matter and qualifications attained in teacher training largely determine the effectiveness of a teacher. Shantz and Latham (2012) affirm that mastery of subject matter that the teachers are able to impart the right skills of communication, collaboration, critical thinking and creativity that are based on the three learning domains of cognitive, affective and psychomotor the mastery of subject content by a teacher greatly determines the quality of teaching and subsequent learning. According to Douglas (2009), teachers who lack basic knowledge on educational strategies and methods are found to have difficulties in classroom management and lack teaching skills required to determine student weaknesses and learning difficulties. Douglas (2009) concluded that, teachers would face problems in the

classroom when they fail to have clear objectives or make earlier plans for the teaching methods.

Training and Certification of Teachers

Cavalluzzo (2004) indicated that teachers' certification is one of the teacher qualities strongly associated with improved students' achievement especially in middle and high school Mathematics. According to Goe, coursework, grades, subject matter mastery, degrees, test scores, experiences, certification(s) and evidence of participation in continued learning such as internships, induction, supplemental training and professional development constitute elements of teacher qualification. Anaele (2002) opined that the amount of knowledge and skills imparted on the students should be a replica of what is found in the industries and the society. Anaele explained that this can only be made possible if the teachers are highly qualified and have the capacities to use workshop equipment and other training facilities effectively.

Teacher Professional Development

Bonney, Amah, Micah, Ahiamenyo, and Lemaire (2015) stipulated that Professional development activities must be conducted by different organizations be it in school or out of school, on the job or during leave or holidays just to name a few. On these occasions, practicing teachers must update their content knowledge and teaching skills so that they can meet the requirements of new curricula, new research findings on teaching and adapt to changes that leads to students' improvement. Kampen (2019) on her part refers to teacher professional development as a continuous educational effort of the teacher to improve on his/her skills that will in turn boost students' outcomes. This could be formal or informal and include the following: conferences, short courses, seminars, retreats and workshops. On the other hand, informal would include independent research, peer learning, taking initiatives or even just chatting with colleagues in the staff room. Although Jacob and Lefgren (2004) pointed that some in-service professional development have no relationship to student achievement in Mathematics and Reading, Brown, Smith and Stein (1995) found out that higher levels of student's achievement are linked to teachers' participation in professional development activities. Wenglinsky (2000) observed that positive correlation exists between professional development activities and students' higher-order skills in science. Therefore, it is incumbent for teachers to show interest and enthusiasm towards continuing professional development since it creates awareness of the advancement in technologies, development of curricula and instructional mode (Alfaidi & Elhassan, 2020). Alfaidi and Elhassan (2020) posited that

positive aspect of in-service training programme enable teachers to plan learning activities as well as empower them to implement curriculum and policies that generate high productivity in terms of students' performance while Bonney, et al. (2015) explained that induction and mentoring programmes are provided by the head teachers and senior teachers in the various schools with the aim of equipping newly trained teachers with the requisite pedagogical skills for effective teaching.

Teaching skills

The teaching skills that teachers need to have at this stage include those of presenting materials according to appropriate sequence, explaining and listening, demonstrating and encouraging students to give adequate responses. For the teacher to carry out effective evaluation and make decision, the teacher needs information about students' attitudes and performance (Tambo, 2003). Feedback implies that the teacher examines the results after assessment and decides how best he/she can plan and implement next strategy for improvement. According to Education System (Edsys, 2018), teaching skills requires good interpersonal skills, effective speaking, strong presentation skills and good organizational skills. Along with the teachers' motivational skills, teachers must have strong empathy and rapport-building strategies to ensure students' success by giving timely feedback about the behaviour and performance of students. On the other hand, OECD (2009) claimed that in as much as effective teachers exist and dominate the teaching learning arena, ineffective teachers due portray some unacceptable character trait. According to OECD ineffective teachers are those that arrives late to class on a regular basis, has classroom discipline problems, not sensitive to students' culture or heritage and expresses a lot of bias about students' academics. Again, parents keep complaining about what is going on their classroom because of the usage of inappropriate language especially when they demean or ridicules students and exhibits defensive behaviour for no apparent reason. The worst part occurs when teachers confront with students due to deficiency in conflict resolution skills (OECD, 2009).

Methodology

The study adopted the cross-sectional research design. This enables the researchers to collect data from the sample schools using a questionnaire. The student data was collected in classroom and workshops as necessary over a period of two weeks. The teacher questionnaire was administered and collected two weeks after and the WhatsApp was used to facilitate communications between the participants and researcher. The population for the

study was made up of 3,251 teachers and 45,205 students representing all the teachers and students in Government Technical High Schools in the Littoral and Southwest Regions of Cameroon. Using the Krejcie and Morgan table a sample of 83 teachers and 277 students was drawn from 116 teachers and 954 students of 5 Technical High schools in the South West and 4 in the Littoral regions using simple random and proportionate sampling techniques.

A structured questionnaire was used to collect the data from both teacher and students participants.

The construct validity of the instrument was checked by subject experts while internal consistency assumption were verified with the support of Cronbach's Coefficient Alpha (α), giving a reliability coefficient of 0.857 with variance of 0.019 for teachers' and 0.784 and variance of 0.016 for students. Data was analysed using the Statistical Package for Social Sciences (SPSS) Standard version, Release 21.0 (IBM Inc. 2012). The questionnaire was made of categorical variables and data were analysed using counting techniques namely frequency and proportions while Multiple-Responses-Analysis was used to calculate the aggregate score for conceptual

components. Correlation test cross-validated with Binary Logistic Regression was used to assess the predictive effect of the teacher quality on students' acquisition of vocational skills. But we had to choose between a parametric correlation test and a non-parametric correlation test following the statistical data assumption requirements. All the composite variables violated the normality assumption from both Kolmogorov-Smirnov and Shapiro Wilk perspectives ($P < 0.05$) in all instances and the non-parametric Spearman's Rho correlation test was then used (Nana, 2018). The findings were presented in tables.

Findings

Teachers' Perspectives

Teachers generally acknowledged (71.6%) that subject matter knowledge plays an important role in their endeavours to enable students develop requisite skills. They mostly perceived that subject matter acquired during teacher training in ENSET has helped me to effectively plan and deliver my lessons with a proportion of 91.6% (76), while on the opposite hand, the least percentage said not to face difficulties in completing the syllabus within the stated time 56.6% (47), table 1.

Table 1: Teachers' Description of Subject Matter Knowledge

| Subject Matter Knowledge | Stretched | | | | Collapsed | |
|--|----------------|----------------|---------------|-------------------|------------------------|------------------------------|
| | Strongly Agree | Agree | Disagree | Strongly Disagree | Strongly Agree & Agree | Strongly Disagree & Disagree |
| Subject matter acquired during teacher training in ENSET has helped me to effectively plan and deliver my lessons. | 44.6% (37) | 47.0% (39) | 4.8% (4) | 3.6% (3) | 91.6% (76) | 8.4% (7) |
| Inadequate coverage of the syllabus is greatly cause by failure to master subject content. | 28.9% (24) | 30.1% (25) | 38.6% (32) | 2.4% (2) | 59.0% (49) | 41.0% (34) |
| I do not face difficulties in completing the syllabus within the stated time. | 16.9% (14) | 39.8% (33) | 34.9% (29) | 8.4% (7) | 56.6% (47) | 43.4% (36) |
| I have full mastery of the subject matter and transmit it to students without any difficulties | 27.7% (23) | 45.8% (38) | 24.1% (20) | 2.4% (2) | 73.5% (61) | 26.5% (22) |
| The subject matter that I acquired from ENSET have helped me to relate lessons and practical to student's real life experiences. | 33.7% (28) | 43.4% (36) | 16.9% (14) | 6.0% (5) | 77.1% (64) | 22.9% (19) |
| MRA | 30.4% (126) | 41.2% (171) | 23.9% (99) | 4.6% (19) | 71.6% (297) | 28.4% (118) |

Table 2: Teachers' Description of Training and Certification

| Training and Certification | Stretched | | | | Collapsed | |
|--|----------------|----------------|----------------|-------------------|------------------------|------------------------------|
| | Strongly agree | Agree | Disagree | Strongly disagree | Strongly agree & Agree | Strongly Disagree & Disagree |
| The department of building construction has adequate trained personnel. | 44.6% (37) | 44.6% (37) | 6.0% (5) | 4.8% (4) | 89.2% (74) | 10.8% (9) |
| I have acquired additional training since I left teacher's training college. | 44.6% (37) | 39.8% (33) | 12.0% (10) | 3.6% (3) | 84.3% (70) | 15.7% (13) |
| I teach high school because I have acquired the grade "Professeurs des Lycées d'Enseignement Technique" (PLET) | 22.9% (19) | 33.7% (28) | 37.3% (31) | 6.0% (5) | 56.6% (47) | 43.4% (36) |
| I teach secondary school because I have acquire the grade "Professeurs des College d'Enseignement Technique." (PCET) | 22.9% (19) | 31.3% (26) | 28.9% (24) | 16.9% (14) | 54.2% (45) | 45.8% (38) |
| Holders of Bacaluaareate, CAPIET are allowed to teach building construction courses in the high school. | 16.9% (14) | 20.5% (17) | 47.0% (39) | 15.7% (13) | 37.3% (31) | 62.7% (52) |
| MRA | 30.4% (126) | 34.0% (141) | 26.3% (109) | 9.4% (39) | 64.3% (267) | 35.7% (148) |

Teachers on the average (64.3%) reported that they were adequately trained and certified, and were mostly satisfied with the fact that the department has adequate trained personnel 89.2% (74), table 2.

Table 3: Teachers' Description of Professional Development

| Professional Development | Stretched | | | | Collapsed | |
|---|----------------|----------------|---------------|-------------------|------------------------|------------------------------|
| | Strongly Agree | Agree | Disagree | Strongly Disagree | Strongly Agree & Agree | Strongly Disagree & Disagree |
| In-service training and workshops are organized yearly for teachers to improve their pedagogic skills. | 31.3% (26) | 53.0% (44) | 14.5% (12) | 1.2% (1) | 84.3% (70) | 15.7% (13) |
| I am always invited to conferences and seminars to acquire advance skills in technologies and modern teaching techniques. | 28.9% (24) | 41.0% (34) | 27.7% (23) | 2.4% (2) | 69.9% (58) | 30.1% (25) |
| New teachers are mentored by old and experienced teachers. | 39.8% (33) | 36.1% (30) | 18.1% (15) | 6.0% (5) | 75.9% (63) | 24.1% (20) |
| I am constantly supervised by the regional and national inspectors of secondary education. | 30.1% (25) | 41.0% (34) | 21.7% (18) | 7.2% (6) | 71.1% (59) | 28.9% (24) |
| Pre and post conference meetings are held between the teacher and inspector before and after lesson observation. | 21.7% (18) | 39.8% (33) | 28.9% (24) | 9.6% (8) | 61.4% (51) | 38.6% (32) |
| MRA | 30.4% (126) | 42.2% (175) | 22.2% (92) | 5.3% (22) | 72.5% (301) | 27.5% (114) |

A majority of teachers (72.5%) acknowledged that their professional development activities were satisfactory. They mostly 84.3% (70) cherished in-service training and workshops organized yearly for teachers to improve their pedagogic skills by the department of building construction (table 3).

Table 4: Teachers' Description of Teaching Skills

| Teaching skills | Stretched | | | | Collapsed | |
|--|----------------|----------------|---------------|-------------------|------------------------|------------------------------|
| | Strongly agree | Agree | Disagree | Strongly disagree | Strongly agree & Agree | Strongly Disagree & Disagree |
| I plan and organize my lesson notes before the next lesson | 38.6% (32) | 49.4% (41) | 8.4% (7) | 3.6% (3) | 88.0% (73) | 12.0% (10) |
| I have the ability to communicate lesson objectives at the beginning of my lessons and present materials in a systematic manner to students. | 36.1% (30) | 44.6% (37) | 15.7% (13) | 3.6% (3) | 80.7% (67) | 19.3% (16) |
| I use digitals like print, graphic, audio-visual, electronics devices to enhance skills acquisition by students. | 32.5% (27) | 28.9% (24) | 31.3% (26) | 7.2% (6) | 61.4% (51) | 38.6% (32) |
| I have an excellent skills in observing and controlling students' poor behaviour during my lessons. | 26.5% (22) | 53.0% (44) | 15.7% (13) | 4.8% (4) | 79.5% (66) | 20.5% (17) |
| I am patience to listen to students' worries and complaints because they are disrespectful. | 31.3% (26) | 43.4% (36) | 19.3% (16) | 6.0% (5) | 74.7% (62) | 25.3% (21) |
| MRA | 33.0% (137) | 43.9% (182) | 18.1% (75) | 5.1% (21) | 76.9% (319) | 23.1% (96) |

Teachers generally (76.9%) reported that their teaching skills were good. They mostly 88.0% (73) planed and organized their lesson notes before the next lesson. They were least comfortable with the use of digitals like print, graphic, audio-visual, electronics devices to enhance skills acquisition by students though majority agreed 61.4% (51), table 4.

Table 5: Teachers' Description of Teacher Quality

| Teacher Quality | Stretched | | | | Collapsed | |
|----------------------------|----------------|----------------|----------------|-------------------|------------------------|------------------------------|
| | Strongly Agree | Agree | Disagree | Strongly Disagree | Strongly Agree & Agree | Strongly Disagree & Disagree |
| Subject matter knowledge | 30.4% (126) | 41.2% (171) | 23.9% (99) | 4.6% (19) | 71.6% (297) | 28.4% (118) |
| Training and certification | 30.4% (126) | 34.0% (141) | 26.3% (109) | 9.4% (39) | 64.3% (267) | 35.7% (148) |
| Professional development | 30.4% (126) | 42.2% (175) | 22.2% (92) | 5.3% (22) | 72.5% (301) | 27.5% (114) |
| Teaching skills | 33.0% (137) | 43.9% (182) | 18.1% (75) | 5.1% (21) | 76.9% (319) | 23.1% (96) |
| MRA | 31.0% (515) | 40.3% (669) | 22.6% (375) | 6.1% (101) | 71.3% (1184) | 28.7% (476) |

In overall, the majority (71.3%) of teachers acknowledged that they were adequately qualified to teach in the department of building construction. They were mostly comfortable with their teaching skills 76.9% (319), and least agreed with training and certification though this achievement was acknowledged by a strong majority of 64.3% (267), as presented on table 5.

Table 6: Teachers' Description of Teacher Quality Layered by Demographic Information

| Demographic indicator | Categories | Adequacy of teacher quality | | N _{responses} | χ^2 -test |
|-----------------------------------|-----------------------|-----------------------------|-------------|------------------------|--------------------------|
| | | Agree | Disagree | | |
| Location of school | Southwest Region | 77.7% (855) | 22.3% (245) | 1100 | $\chi^2=4.00$ P=0.046 |
| | Littoral Region | 58.8% (329) | 41.3% (231) | 560 | |
| Higher professional qualification | A/L technical | 64.8% (415) | 35.2% (225) | 640 | $\chi^2=0.91$ P=0.636 |
| | DIPLET I | 71.8% (359) | 28.2% (141) | 500 | |
| | DIPLET II | 80.2% (369) | 19.8% (91) | 460 | |
| | Engineer | 68.3% (41) | 31.7% (19) | 60 | |
| Higher academic qualification | Advance Level General | 70.5% (465) | 29.5% (195) | 660 | $\chi^2=0.72$ P=0.698 |
| | Bachelor degree | 68.9% (482) | 31.1% (218) | 700 | |
| | Master | 79.0% (237) | 21.0% (63) | 300 | |
| Longevity of service | 0- 5year | 75.6% (499) | 24.4% (161) | 660 | $\chi^2=0.73$ P=0.865 |
| | 6 – 10year | 66.0% (317) | 34.0% (163) | 480 | |
| | 10- 15years | 69.8% (293) | 30.2% (127) | 420 | |
| | 16 Years | 75.0% (75) | 25.0% (25) | 100 | |
| Sex | Male | 72.7% (960) | 27.3% (360) | 1320 | $\chi^2=0.12$ P=0.726 |
| | Female | 65.9% (224) | 34.1% (116) | 340 | |
| Age | < 21 | 59.4% (95) | 40.6% (65) | 160 | $\chi^2=1.03$ P=0.793 |
| | 22-32 | 78.9% (363) | 21.1% (97) | 460 | |
| | 33-42 | 68.8% (564) | 31.2% (256) | 820 | |
| | 43 -52 | 73.6% (162) | 26.4% (58) | 220 | |

Teachers' perception of teacher quality was significantly associated with the location of the school, as they significantly ($P<0.05$) agreed more (77.7%) in the Southwest Region as compared to (58.8%) for the Littoral Region (table 6).

Students' Perspectives

Table 7: Students' Description of Subject Matter Knowledge

| Subject Matter Knowledge | Stretched | | | | Collapsed | |
|--|----------------|-------------|-------------|-------------------|------------------------|------------------------------|
| | Strongly Agree | Agree | Disagree | Strongly Disagree | Strongly Agree & Agree | Strongly Disagree & Disagree |
| My teachers have sufficient subject matter to teach the building construction courses in the high school. | 33.2% (89) | 50.0% (134) | 13.1% (35) | 3.7% (10) | 83.2% (223) | 16.8% (45) |
| My teachers cover all of the syllabus because they possess inadequate knowledge of the subject matter. | 20.9% (56) | 41.4% (111) | 29.1% (78) | 8.6% (23) | 62.3% (167) | 37.7% (101) |
| My teachers face difficulties in completing the syllabus within the stated time. | 22.8% (61) | 43.3% (116) | 27.6% (74) | 6.3% (17) | 66.0% (177) | 34.0% (91) |
| My teachers have full mastery of the subject matter and transmit it to students without any difficulties. | 22.4% (60) | 45.9% (123) | 25.0% (67) | 6.7% (18) | 68.3% (183) | 31.7% (85) |
| The subject matter that my teachers acquired from ENSET helps them to relate lessons and practical to students' real life experiences. | 25.7% (69) | 50.7% (136) | 19.0% (51) | 4.5% (12) | 76.5% (205) | 23.5% (63) |
| MRA | 25.0% (335) | 46.3% (620) | 22.8% (305) | 6.0% (80) | 71.3% (955) | 28.7% (385) |

A majority (71.3%) of students agreed their teachers had knowledge of the subject matter (Table 7).

Table 8: Students' Description of Training and Certification

| Training And Certification | Stretched | | | | Collapsed | |
|--|----------------|----------------|----------------|-------------------|------------------------|------------------------------|
| | Strongly Agree | Agree | Disagree | Strongly Disagree | Strongly Agree & Agree | Strongly Disagree & Disagree |
| The teachers presently teaching building construction courses are inadequately trained. | 28.0% (75) | 44.0% (118) | 19.0% (51) | 9.0% (24) | 72.0% (193) | 28.0% (75) |
| My teachers have acquired additional training since they left teacher training colleges. | 27.6% (74) | 52.2% (140) | 15.7% (42) | 4.5% (12) | 79.9% (214) | 20.1% (54) |
| Teachers who teach high school are those that have acquired grade of "Professeurs des Lycées d'Enseignement Technique" | 31.7% (85) | 44.0% (118) | 17.9% (48) | 6.3% (17) | 75.7% (203) | 24.3% (65) |
| Teachers who have acquired the grade of "Professeurs des College d'Enseignement Technique" PCET are allowed to teach 2 nd cycle in high school. | 22.0% (59) | 51.9% (139) | 21.3% (57) | 4.9% (13) | 73.9% (198) | 26.1% (70) |
| Holders of Baccalaureate, CAPIET are allowed to teach building construction courses in the high school. | 20.9% (56) | 32.8% (88) | 28.0% (75) | 18.3% (49) | 53.7% (144) | 46.3% (124) |
| MRA | 26.0% (349) | 45.0% (603) | 20.4% (273) | 8.6% (115) | 71.0% (952) | 29.0% (388) |

Students generally (71.0%) agreed that their teachers are properly trained and certified (table 8).

Table 9: Students' Description of Professional Development

| Professional Development | Stretched | | | | Collapsed | |
|---|----------------|----------------|----------------|-------------------|------------------------|------------------------------|
| | Strongly agree | Agree | Disagree | Strongly disagree | Strongly agree & Agree | Strongly Disagree & Disagree |
| My teachers attend in-service training and workshops yearly to improve their pedagogic skills. | 23.5% (63) | 46.3% (124) | 21.3% (57) | 9.0% (24) | 69.8% (187) | 30.2% (81) |
| My teachers are invited to conferences and seminars to acquire advance skills in technologies and modern teaching techniques. | 27.2% (73) | 53.0% (142) | 13.4% (36) | 6.3% (17) | 80.2% (215) | 19.8% (53) |
| New teachers are always mentored by old and experienced teachers. | 29.9% (80) | 51.9% (139) | 13.8% (37) | 4.5% (12) | 81.7% (219) | 18.3% (49) |
| My teachers are constantly supervised by regional and national inspectors of secondary education. | 26.1% (70) | 41.8% (112) | 22.0% (59) | 10.1% (27) | 67.9% (182) | 32.1% (86) |
| When my teachers are observed by regional and national inspectors they hold evaluation meetings at the end of the lesson. | 26.5% (71) | 43.7% (117) | 23.5% (63) | 6.3% (17) | 70.1% (188) | 29.9% (80) |
| MRA | 26.6% (357) | 47.3% (634) | 18.8% (252) | 7.2% (97) | 74.0% (991) | 26.0% (349) |

Students generally (74.0%) acknowledged their teachers efforts to develop themselves professionally in the prospect of continuous learning (table 9).

Table 10: Students' Description of Teaching Skills

| Teaching Skills | Stretched | | | | Collapsed | |
|---|----------------|----------------|----------------|-------------------|------------------------|------------------------------|
| | Strongly agree | Agree | Disagree | Strongly disagree | Strongly agree & Agree | Strongly Disagree & Disagree |
| My teachers plan and organize their lesson notes before the next lesson. | 34.3% (92) | 51.5% (138) | 11.6% (31) | 2.6% (7) | 85.6% (230) | 14.2% (38) |
| My teachers communicate lesson objectives at the beginning of the lesson and present materials in a systematic manner that affect student's skills. | 29.5% (79) | 45.9% (123) | 20.5% (55) | 4.1% (11) | 75.4% (202) | 24.6% (66) |
| My teachers use media like print, graphic, audio-visual and electronics devices to enhance skills acquisition by students. | 23.9% (64) | 33.6% (90) | 28.4% (76) | 14.2% (38) | 57.5% (154) | 42.5% (114) |
| My teachers have excellent skills in observing and controlling students' poor behaviour during the lessons. | 24.6% (66) | 49.6% (133) | 16.0% (43) | 9.7% (26) | 74.3% (199) | 25.7% (69) |
| My teachers have the patience to listen to student's worries and complaints during his lesson. | 29.1% (78) | 45.1% (121) | 19.4% (52) | 6.3% (17) | 74.3% (199) | 25.7% (69) |
| MRA | 28.3% (379) | 45.1% (605) | 19.2% (257) | 7.4% (99) | 73.4% (984) | 26.6% (356) |

Students agreed (73.4%) that their teachers have adequate teaching skills. They were mostly satisfied with teachers' planning and organization of lesson notes before the next lesson 85.6% (230), and also least 57.5% (154) perceived that their teachers use media like print, graphic, audio-visual and electronics devices to enhance skills acquisition by students, just the same as the teachers themselves, as presented on table 10.

Table 11: Students' Description of Teacher Quality

| Teacher quality (MRA) | Stretched | | | | Collapsed | |
|----------------------------|-----------------|-----------------|-----------------|-------------------|------------------------|------------------------------|
| | Strongly agree | Agree | Disagree | Strongly disagree | Strongly agree & Agree | Strongly Disagree & Disagree |
| Subject matter knowledge | 25.0% (335) | 46.3% (620) | 22.8% (305) | 6.0% (80) | 71.3% (955) | 28.7% (385) |
| Training and certification | 26.0% (349) | 45.0% (603) | 20.4% (273) | 8.6% (115) | 71.0% (952) | 29.0% (388) |
| Professional development | 26.6% (357) | 47.3% (634) | 18.8% (252) | 7.2% (97) | 74.0% (991) | 26.0% (349) |
| Teaching skills | 28.3% (379) | 45.1% (605) | 19.2% (257) | 7.4% (99) | 73.4% (984) | 26.6% (356) |
| MRA | 26.5% (1420) | 45.9% (2462) | 20.3% (1087) | 7.3% (391) | 72.4% (3882) | 27.6% (1478) |

Overall, students in the majority (72.4%) acknowledged the good quality of teaching by their teacher with particular satisfaction for professional development 74.0% (991), followed by teaching skills 73.4% (984), subject matter knowledge 71.3% (955), then training and certification 71.0% (952), table 11.

Table 12: Students' Description of Teacher Quality Layered by Background Information

| Demographic indicator | Categories | Adequacy of teacher quality | | Nresponses | χ^2 -test |
|-----------------------|------------------|-----------------------------|-------------|------------|--------------------------|
| | | Agree | Disagree | | |
| Location of school | Southwest Region | 72.4% (2026) | 27.6% (774) | 2800 | $\chi^2=0.01$ P=0.925 |
| | Littoral Region | 72.5% (1856) | 27.5% (704) | 2560 | |
| Class | Lower Sixth | 72.4% (2375) | 27.6% (905) | 3280 | $\chi^2=3.55$ P=0.169 |
| | Upper Sixth | 72.5% (1507) | 27.5% (573) | 2080 | |

| | | | | | |
|-----|--------|--------------|--------------|------|--------------------------|
| Age | 15-20 | 72.6% (2832) | 27.4% (1068) | 3900 | $\chi^2=0.43$ P=0.807 |
| | 21-25 | 73.2% (995) | 26.8% (365) | 1360 | |
| | 26+ | 55.0% (55) | 45.0% (45) | 100 | |
| Sex | Male | 73.0% (3345) | 27.0% (1235) | 4580 | $\chi^2=0.23$ P=0.633 |
| | Female | 68.8% (537) | 31.2% (243) | 780 | |

Students' descriptions of teacher quality were not significantly dependent on demographic information ($P > 0.05$), thus implying that they generally shared the same opinions (table 12). Teachers and students had the same appreciation for teacher quality ($P = 1.000$).

Research Hypothesis: There is no significant relationship between teacher quality in building construction programme and the development of students' vocational skills in technical high schools.

Table 13: Effect of Teacher Quality on Student's Vocational Skills

| | | Teachers' quality | Student vocational skills |
|---------------------------|---------------------|-------------------|---------------------------|
| Teacher's quality | Pearson Correlation | 1 | .785** |
| | Sig. (2-tailed) | | .000 |
| | N | 83 | 83 |
| Student vocational skills | Pearson Correlation | .785** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 83 | 83 |

**. Correlation is significant at the 0.01 level (2-tailed).

There was a significant positive correlation between teacher quality and the acquisition of vocational skills by students ($r = 0.785$; $P = 0.000$). The hypothesis here stated is then rejected. That is, the more effective the teachers are, the more the students will be able to acquire vocational skills (table 13).

Table 14: Binary logistic regression depicting the contribution of teacher quality to the acquisition of vocational skills by students

| Conceptual component | Omnibus Tests of Model Coefficients | Explanatory Power (Cox & Snell R Square) | N |
|-------------------------------|-------------------------------------|--|-----|
| Subject matter knowledge | $\chi^2=24.842$ P=0.000 | 8.9% | 268 |
| Training and certification | $\chi^2=28.109$ P=0.000 | 10.0% | 268 |
| Professional development | $\chi^2=13.584$ P=0.018 | 4.9% | 268 |
| Teaching skills | $\chi^2=23.491$ P=0.000 | 8.4% | 268 |
| IVM (Overall teacher quality) | $\chi^2=63.482$ P=0.000 | 21.1% | 268 |

There was a significant positive correlation between teacher quality and the acquisition of vocational skills by students ($P = 0.000$). The hypothesis here stated is then rejected, thus corroborating Spearman's Rho correlation test. The overall explanatory power for the conceptual component 'teacher quality' was 21.1%. All the sub-components have a very significant influence on the dependent variable ($P = 0.000$). Therefore, the more effective the teachers are, the more the students will be able to acquire vocational skills (table 14).

Comparing teachers and students' perspectives

Teachers and students had the same appreciation for teacher quality ($P = 1.000$). In their majority, they agreed, though below the critical cut point for effective implementation of 80%. However, this deviation was not significant for teachers ($\chi^2 = 1.59$; $df = 1$; $P = 0.208$), unlike for students ($\chi^2 = 5.34$; $df = 1$; $P = 0.021$). This therefore implies that if teachers perceived teacher quality to be effective, this was also the case with students. This shows that teacher quality

is good but below the expected standard for effective teaching of the programme.

Discussion

Finding shows that there was a significant positive correlation between teacher quality and the acquisition of vocational skills by students. The more effective the teachers are, the more the students are able to acquire vocational skills. Specifically, teachers and students had the same appreciation of teacher quality although below the expected standard for

effective implementation of the building construction programme. In overall, teachers acknowledged that they had adequate quality to teach and were mostly satisfied with teaching skills and least satisfied with training and certification. Students also, acknowledged good teaching quality of their teachers. They mostly perceived teaching skills and least acknowledged training and certification. They indicated that In-service training and workshops practices were insufficient as Holders of the Baccaulareate and CAPIET teach building construction in the high schools due to teacher shortages. Akpochafo and Odu (2008) findings agree with those of this study that, the first aspect that the teachers must possessed before teaching is the element of subject matter related to students' real-life experiences. Secondly, the teacher ensures that the subject matter should replicate actions that gives various opportunities for the learner to develop skills and adopt teaching methodology that involve demonstration. Shantz and Latham (2012) add that teacher's mastery of subject matter form the foundation upon which the education of a teacher is based. Hammond's (2006) finding reveal that, teacher's mastery of subject matter and qualifications attained in teacher training largely determine the effectiveness of the teacher. Shantz and Latham (2012) agree that adequate mastery of subject matter enable teachers to impart the right skills of communication, collaboration, critical thinking and creativity related to the three learning domains of cognitive, affective and psychomotor. According to Douglas (2009), teachers who lack basic knowledge on educational strategies and methods are found to have difficulties in classroom management and lack teaching skills required to determine student weaknesses and learning difficulties. Ryan's (1970) theory on teachers' behaviour concurs with the study findings. According to Kogan (1956), teachers with direct behaviour are anti-social, impatient, self-centred, conceited and hostile and as a result, may hinder the development and academic achievement of the students. On the other hand, Ryan's theory emphasizes that teacher should act indirectly and give freedom to the students to act and express their thoughts while the teacher accepts and explains the ideas of the students. Ryan (1970) describes such a teacher with indirect behaviour as helpful, good-natured, friendly, trustworthy, patient, happy and advisory.

However, Students' opinions reveal that while some of their teachers are holders of lower qualifications the school administration does not adequately provide them with better means of acquiring new skills. This practice contradicts Cavalluzzo (2004) who argues

that teachers' certification is one of the teacher qualities that improve students' achievement especially in middle and high school Mathematics. Carr (2006) noted that highly qualified teachers with full certification are those that have a greater significance on students' achievement especially teachers in elementary and middle secondary schools. Odu (2011) added that, building construction teachers should be professionally qualified and competent enough to impact the required skills to the students. Anaele (2002) concluded that the amount of knowledge and skills imparted on the students should be a replica of what is found in the industries and the society and this can only be made possible if the teachers are highly qualified and have the capacities to use workshop equipment and other training facilities effectively. Bonney, et al. (2015) in line with findings of this study revealed that induction and mentorship programmes provided by the head teachers and senior teachers equip newly trained teachers with the prerequisite pedagogical skills for effective teaching. Fifield (2015) supported that, mentoring gives novice and master teachers opportunities to learn from each other and enable new teachers to be creative and effective on the day-to-day teaching challenges. Fifield added that mentoring has a dramatic effects on teachers while smith (2002) concluded that mentoring have the ability to increased retention, improved attitudes and above all increased feelings of efficacy and control with a wider experience of using instructional strategies.

Stronge (2007) in line with the finding shows that, an effective teacher must relate theory to practice with some sense of humour while maintaining some level of confidential trust and respect for all the students yet be very flexible and spontaneous to students' worries and challenges in the classroom. The impact of the teacher quality on students' performance was earlier highlighted by Bonney, Amoah, Micah, Ahiamenyo and Lemaire (2015). They recommended that, teachers should always attend in-service training programmes and workshops so as to update their pedagogical skills. Lydiah, Ngugi and Thinguri (2014) corroborated the findings of this study that, subject matter knowledge significantly predicts student's acquisition of vocational skills. Alfidi and Elhassan (2020) noted that in-service teacher training programmes should be carefully designed in order to meet the educational and personal needs of the teachers, once these needs have been identified proper planning should be made to assess and support teachers.

Conclusion

All in all, teachers and students generally reported that teachers had developed and were using some

good qualities in discharging their duties of teaching, training and enabling students to develop vocational skills. They affirmed that this was the case on all the indicators that were investigated, that is, mastery of subject matter, training and certification, professional development and their use of teaching skills. However, the same findings showed that on all the above indicators, teachers had developed qualities were just above average and yet to reach excellence. This situation is compounded by the shortage of qualified teachers, necessitating the use of underqualified teachers to meet the teaching needs. This serves as a further handicap in the quality of teaching and training received by students and consequently negatively affects their level of vocational skills development.

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